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Remarks

This application has been reviewed in light of the nonfinal Office Action of December 16, 2005. Claims 1-20 are pending. Claims 5-10 and 16 are objected to, and claims 1-4, 11-15, and 17-20 are rejected. In response, claims 13 and 16 are amended; new claim 21 is added; and the following remarks are submitted. Reconsideration of this application, as amended, is requested.

Applicant acknowledges the indication of allowable subject matter. Applicant has not amended the objected-to claims to rewrite the objected-to subject matter in independent form at this time, as it is believed that all of the claims are allowable over the art of record in light of the amendments made herein and the following remarks.

Claim 16 is objected to because of an informality and has been amended responsively.

Claims 1-4, 11-15, and 17-20 are rejected under 35 USC 102 as anticipated by Hou US patent 6,596,979. Applicant traverses this ground of rejection.

The following principle of law applies to sec. 102 rejections. MPEP 2131 provides: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the ... claim. The elements must be arranged as required by the claim..." [citations omitted] This is in accord with the decisions of the courts. Anticipation under section 102 requires 'the presence in a single prior art disclosure of all elements of a claimed invention arranged as in that claim.' Carella v. Starlight Archery, 231 USPQ 644, 646 (Fed. Cir., 1986), quoting Panduit Corporation v. Dennison Manufacturing Corp., 227 USPQ 337, 350 (Fed. Cir., 1985)

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Thus, identifying a single element of the claim which is not disclosed in the reference is sufficient to overcome a Sec. 102 rejection.

The explanation of the rejection focuses on the embodiment of Figure 10 of Hou, discussed at col. 9, line 52 et seq. Applicant will primarily address this embodiment as well.

Each of claims 1 and 13 recites in part:

"an optics system that images a point feature of a scene at an image plane as a blur-circle image having a blur diameter"

Applicant can find no such disclosure in Hou of "an optics system that images a point feature of a scene at an image plane as a blur-circle image having a blur diameter"

There is no disclosure in Hou of a blurred image of a point feature of a scene, such as discussed in para. [0034] of the present Specification and recited in claims 1 and 13. Hou refers only to "scanning dots" such as the scanning dots 960, 968, 970 in Figure 10, which Hou refers to as a "spot on the scanning" and would appear to correspond to the exact feature of the scene being imaged. Hou makes no disclosure that the "scanning dot" is the blurred image of a point in the scene. Hou leaves the meaning of "scanning dot" undefined and unclear, but because of Hou's interest in scanner devices (col. 1, lines 14-36) that use illumination systems, it is most likely that the "scanning dot" is an illumination dot, not a blurred image of a point in the scene. If the Examiner has any information on any other meaning of "scanning dot", Applicant asks that it be made of record.

In any event, MPEP 2131 requires that "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference..." Hou has no disclosure that the scanning dots meet the "blur-circle image" and "blur diameter" language of claims 1 and 13.

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Claim 1 further recites in part:

"...the detector array is a one-dimensional detector array comprising a plurality of detector subelements each having a width of from about 1/2 to about 5 blur diameters, and a length of n blur diameters,..."

The detector array disclosed in Figure 10 and discussed at col. 9, lines 52 et seq. is a two-dimensional detector array, not a one-dimensional detector array as recited in claim 1.

The explanation of the rejection (page 2, last line-page 3, line 2) asserts that this limitation is disclosed at col. 10, lines 12-18 of Hou. There is no such disclosure at this location or any other location of Hou. Applicant has carefully read col. 10, lines 12-18, and finds not even a remote suggestion of such a limitation. This portion of Hou says nothing about the dimensions of detector elements relative to the diameters of the circles 960, 968, and 970 or relative to blur diameters. Col. 10, lines 2-18 of Hou observes that when one of the circles overlaps three photodetectors in Figure 10, it overlaps three photodetectors so that each of the three photodetectors generates an output signal.

Further, Hou makes it very clear that there is no attempt to describe or illustrate the scanning dots 960, 968, 970 as having any particular size or dimensions relative to the detector sizes. Hou states that "It should be noted that scanning dot 960, 968, and 970 are for illustration only" and states that the each scanning dot "corresponds to a group of photodetectors". (col. 10, lines 13-18) These statements must be read in conjunction with Hou's disclosure that "the arrangement of rows of photodetectors is made in such manner that at any exposure, three colored photodetectors will be exposed." (col. 9, line 67-col. 10, line 2) As long as the scanning dot overlaps three colored photodetectors at some point, Hou's disclosure is met.

In short, Hou presents no concept of the size of photodetectors in relation to a blurred point image. The reading of Hou in the explanation of the rejection is made only in light of the present disclosure, which takes a much more sophisticated approach

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to the designing of photodetector dimensions in relation to the blurred image produced by the optics system.

Claim 1 further recites in part:

"wherein an overlap of each of the two adjacent detector subelements is m blur diameters and a center-to-center spacing of each of the two adjacent detector subelements is n_0 blur diameters, wherein n is equal to about $3m$ and m is equal to about $n_0/2$."

Although the explanation of the rejection argues at page 3, lines 5-11 that this limitation is somehow disclosed in Hou, there is no such disclosure for several reasons. First, Hou does not disclose a blur diameter at all, in any context. Second, Hou discusses the overlap of adjacent photodetectors in terms of the size of the photodetector, not in terms of blur diameters. Third, Hou has no mention of the spacing of adjacent detector subelements in terms of blur diameters.

Regarding claims 2-4, Hou does not mention these recited relationships or a blur diameter in any manner.

As discussed earlier, claim 13 does not disclose "an optics system that images a point feature of a scene at an image plane as a blur-circle image having a blur diameter".

Claim 13 further recites in part:

"...detector subelements are sized responsive to the blur diameter..."

Hou does not disclose a blur diameter, and certainly does not disclose or suggest that the photodetectors are sized in any manner responsive to a blur diameter.

Claim 17 recites in part:

"cooperatively analyzing the output signals from at least two spatially adjacent array subelements

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to establish a data set reflective of an extent to which output signals responsive to the image of the feature are produced from exactly one or from more than one of the adjacent array subelements, and

to reach a conclusion from the data set as to a location of the image of the feature on the segmented array."

The explanation of the rejection (paragraph bridging pages 4-5) suggests that this limitation is disclosed in relation to Figures 2A-2B, 3, and 10, and specifically at col. 5 lines 27-60. Applicant respectfully disagrees. The logic illustrated in Figures 2A-2B and 3 has no capability for determining whether an output signal responsive to the image is produced from exactly one or from more than one adjacent array subelement. The discussion of the logic at col. 5, lines 47-62 discloses sampling each photodetector individually. There is no mention of any sampling device or logic for determining whether one or more than one of the adjacent photodetectors is producing an output signal.

The explanation of the approach of Figure 10 seems to say that the intensities of all of the red signals are added together to produce an accumulated red signal, all of the green signals are added together to produce an accumulated green signal, and all of the blue signals are added together to produce yet another accumulated red signal (col. 10, lines 19-26). Applicant does not understand why that is done, but in any event there is no disclosure of the above-quoted limitation of claim 17.

Claim 20 recites in part:

"...the step of forming an image includes the step of forming the image having a diameter of one blur diameter"

Hou has no such disclosure, because Hou does not disclose blur diameters and because Hou does not disclose forming an image having a diameter of one blur diameter.

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Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Applicant submits that the application is in condition for allowance, and requests such allowance.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read 'William Schubert', is written over a horizontal line.

William Schubert

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